

C-O-N-F-I-D-E-N-T-I-A-L

CIA/RR GB 64-49
December 1964

CLIMATIC AND SOIL DATA ON UFA

(54°45'N-56°00'E)

I. Climate

Ufa has a continental climate roughly analogous to that of the northern Great Plains region of the United States. It is characterized by long cold winters, short warm summers, and moderate precipitation and snow cover.

Surface air temperatures have wide annual and diurnal fluctuations. The average monthly temperatures (see Table 1) range from 5.7°F in the coldest month (January) to 66.9°F in the warmest month (July). Extreme temperatures of -43.6°F and 98.6°F have been recorded. From late October to early April the average daily temperature is below freezing, and from about late May to early September it is above 50°F. Sometimes, however, thawing occurs in winter, and temperatures below freezing have been recorded in every month except July and August.

The annual precipitation (see Table 2) averages 23 inches, about 60 percent occurring during the warm season (April through October). The maximum monthly precipitation normally occurs in July, with an average of 2.7 inches, and the minimum in April, with an average of 1.1 inches. Recorded annual precipitation has ranged from 10.9 to 30.5 inches. The predominant forms of precipitation are heavy showers and thunderstorms in summer and snow in winter. Snowfall is frequent, generally beginning in October and sometimes occurring as late as May. A persistent snow cover begins to form in early November and usually reaches its maximum depth -- about 20.5 inches as a long-term average -- in the latter part of March. Thawing begins in late March, and by mid-April the snow cover generally has disappeared, leaving muddy conditions which persist for several weeks.

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GROUP 1 Excluded from automatic downgrading and declassification

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Table 1

Temperature a/
(in degrees Fahrenheit)

	<u>Average</u>		<u>Average</u>
January	5.7	July	66.9
February	7.7	August	62.8
March	19.4	September	52.0
April	37.9	October	37.6
May	54.7	November	22.5
June	63.5	December	10.4
Annual 36.7			

Absolute minimum: -43.6

Absolute maximum: 98.6

Average daily temperature equal to or less than 32:
27 October to 6 April

Normal frost-free period: 6 May to 28 September

a. Length of record: 49 years.

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Table 2

Precipitation ^{a/}
(in inches)

	<u>Average</u>	<u>Maximum</u>	<u>Minimum</u>
January	1.7	3.3	0.24
February	1.5	3.7	0.08
March	1.3	4.2	0.04
April	1.1	4.3	0.04
May	1.6	5.7	0.31
June	2.4	5.9	0.47
July	2.7	6.2	0.55
August	2.0	4.8	0.51
September	1.8	5.0	0.20
October	2.1	4.6	0.12
November	2.4	4.7	0.28
December	2.4	5.8	0.16
Annual	23.0	30.5	10.9

Average number of days a year with snow cover: 168 ^{b/}

Average maximum depth of snow cover (based on 10-day
period of greatest depth): 20.5 inches

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- a. Length of record: 49 years, except as noted.
b. Length of record unknown.

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II. Soils

The urban area of Ufa is situated on generally flat to undulating terrain that rises as much as 250 feet above the Belaya and Ufa Rivers. The two aircraft engine plants are located in the northeastern part of Ufa on gently sloping land 50 to 100 feet above the Belaya River. One is about 3.5 miles from the river, the other only a mile.

The upper layer of sediments in the Ufa area varies in depth from 35 to 40 feet and generally consists of sand, clayey silt, and fine silty sand. This upper layer is successively underlain by beds of sandstone, clay, and marl having a total thickness of about 150 feet and then by a layer of gypsum and dolomite with an average thickness of 300 feet.

For installations having foundations less than ¹⁰~~100~~ feet deep, conditions below the level of frost penetration (absolute maximum of 4.5 feet) would vary from good to fair, depending on the degree of compaction for the characteristic sandy and silty sand deposits in the vicinity of the aircraft engine plants. For installations requiring deeper excavations, conditions range from fair to poor and the underlying sediments generally would present complex stabilization problems. Because the terrain is fairly flat, grading problems in the vicinity of the aircraft engine plants would be minimal. Drainage problems affecting construction are seasonal, as the water table varies from about 5 feet below the surface in spring to about 50 feet in summer and fall.

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